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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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John David Wilson

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EXAMINER

SHABMAN, MARK A

ART UNIT

PAPER NUMBER

2856

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/589,977	WILSON, JOHN DAVID	
	Examiner	Art Unit	
	MARK SHABMAN	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19-21 is/are allowed.
- 6) ☒ Claim(s) 1-18 and 22-27 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1, 4 and 24 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

Claim 27 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The limitation of the distance being "about three quarters the diameter of the cutter blade" is unclear as there is no indication as to the size of the blade or the acceptable limits to the term "about" and how much the distance can vary from that amount.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-18 and 22-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cymbalisty US Patent 4,372,174 (hereinafter referred to as Cymbalisty) in view of Rigley GB 2,235,154 A (hereinafter referred to as Rigley).

Art Unit: 2856

Regarding **claim 1**, Cymbalisty discloses a method and apparatus for sampling a core of tar sand in which a core is cut along its length by a moving cutter. Cymbalisty discloses an apparatus for cutting a core sample of tar sand in which "core support means" 4 allow for the core to be held in position during cutting. A "core carrier" exists in stationary cradle 3 of figure 3 which holds the sample while it is being cut and can be placed on the core support device. The apparatus is held in place by the support means while it is cut by cutting means 9 as seen in figure 3. The sample is held in place by members 3, 4 and 5 and the saw is moved relative to the core sample to cut it. Cymbalisty does not disclose placing the sample in a liquid bath while it is cut.

Rigley discloses a sawing apparatus and its method of use in for cutting of concrete beams. The beams are submersed in a fluid bath prior to their being cut by a sawing member which is movable along a path in which the member to be sawn has been placed. Rigley does not specifically discloses the intended use of sawing a core sample, however would be more than capable of doing so with the same components. It would have been obvious to one of ordinary skill in the art at the time of invention to combine the core cutting method of Cymbalisty with that of Rigley to allow for the sample and the core support means to be cut while submerged in a liquid, thus holding the sample more securely and reducing noise and dust while further cooling the blade doing the cutting as described in page 2 paragraph 2 of Rigley.

Regarding **claim 2**, the method of operation of Cymbalisty describes the "core support means" as being fixed to the frame and the saw moving relative to said holding member.

Art Unit: 2856

Regarding **claim 3**, the saws of both Cymbalisty and Rigley are of a rotary type as claimed.

Regarding **claim 4**, Cymbalisty discloses an apparatus for cutting a core sample of tar sand in which a "core support device" 4 allows for the core to be held in position during cutting. A "core holder" exists in stationary cradle 3 of figure 3 which holds the sample while it is being cut and can be placed on the core support device. A cutting head in the saw carriage 8 which holds a circular saw exists for cutting the sample lengthwise, or "along radial planes into two or more parts" as claimed. Cymbalisty does not disclose a fluid bath or trough in which the core sample is located during cutting along with the core support device.

Rigley discloses a sawing apparatus for cutting concrete beams for example which uses a circular saw to move across a sample work which is disposed in a liquid bath or trough during cutting. It would have been obvious to one of ordinary skill in the art at the time of invention to combine the cutting apparatus of Cymbalisty with the trough of Rigley to reduce noise and dust while simultaneously cooling the blade to avoid cracking during the cutting of a core sample. In order to do so, the core holder and support device would be placed within the trough and the sample would be under the surface of a liquid such as oil or water in order to trap any dust or sediment generated.

Regarding **claim 5**, Rigley does not specifically describe the fluid bath as "watertight" as claimed. However, it would have been obvious to one of ordinary skill in

Art Unit: 2856

the art at the time of invention to seal the bath entirely to help prevent any excess dust, heat or noise from affecting the cutting process of the core sample. Further, if the core sample was within the "support device" as claimed, it too would be located below the surface of the water in order to ensure the core itself was covered entirely.

Regarding **claim 6**, the cutting head of Cymbalisty runs along a pair of horizontal shafts 208 or "linear bearing means" which when combined with the trough of Rigley would be "longitudinal" of said trough.

Regarding **claim 7**, the shafts 208 of Cymbalisty are located above the work to be cut, thus if said work was located within the bath of Rigley as previously described, the shafts would be "located above the level of the trough" as well.

Regarding **claim 8**, the apparatus of Cymbalisty does not comprise "roller means" for movement along the "linear bearing means" as claimed. However, as rollers are commonly used as a means to reduce friction between two interacting parts, it would have been obvious to one of ordinary skill in the art at the time of invention to substitute rollers, attached to the "cradle" 8 of Cymbalisty to allow for a smooth movement of the cutting head through the core sample. The "cradle" 8 further comprises a motor 19 which would be obvious to make of an electric type as motor 14 is also electric. A "rotatable tool" 9 in the form of a blade is used to cut the sample and driven by motor 19 as claimed. Cymbalisty discloses a suction nozzle 216 in figure 6 covering the tools 215 which reads on the "cowling within which the tool is contained" as it covers the tool.

Art Unit: 2856

Regarding **claim 9**, the purpose of the suction nozzle in figure 6 of Cymbalistry is to remove dust from the cut piece. In the embodiment where a trough is located below the tool, such as that previously discussed with regards to Cymbalistry and Rigley, the need for a suction nozzle is minimal as the dust is collected in the water bath. However, it still would have been obvious to cover up the top of the cutting tool with a nozzle to help contain the water in the trough and prevent it from leaving the fluid bath which could lead to greater dust, noise and heat generation.

Regarding **claim 10**, Cymbalistry discloses cradle means 3 for securing the core sample in place during operation. There further exists vertically movable brackets 204 which allow for the sample to be positioned vertically or "relative to the cutter" as claimed.

Regarding **claim 11**, Cymbalistry teaches supporting the work by use of a cradle and two pairs of supports 204 of figure 4b and figure 5 which are able to support the ends of the core sample. The brackets comprise angled portions to accommodate the round sample to be cut.

Regarding **claim 15**, Cymbalist teaches the method of moving the cutting head along the length of the trough, wherein the trough is located below the work in the cutting direction as previously discussed. Examiner takes official notice that moving a member via a screw member and a nut carried by the head is commonly used in

Art Unit: 2856

devices such as drill presses, vice jaws etc. and therefore would have been obvious to use to move the saw head as well since turning of the screw can be accomplished a safe distance from the saw blade.

Regarding **claim 16**, the apparatus of Rigley contains a fluid storage tank 100 which comprises a settling portion 108 for receiving the cutting portions of the work as claimed. It would have been obvious to one of ordinary skill in the art at the time of invention to include a settling portion such as this to allow for the shavings of the work (i.e. dust) to collect for removal as described in page 2.

Regarding **claim 17**, given the embodiment of Cymbalisty, it would have been obvious to one of ordinary skill in the art at the time of invention to locate the settling tank below the trough as it would allow for the shavings cut to fall directly into it due to gravity. Further, it would have been obvious to locate the tank at a single end of the trough so that all of the shavings could be collected together either by slanting the trough towards that end or moving the water in that direction.

Regarding **claim 18**, the tank 100 of Rigley comprises the settling portion and means for circulating the water through the system, thus moving the cut pieces of the work to the settling portion. It would have been obvious to one of ordinary skill in the art at the time of invention to move the "sludge" that is collected in the settling portion to another tank eventually to allow for more sludge to be collected as more samples are cut.

Regarding **claim 23**, Rigley discloses the use of water as a fluid for use when operating the saw blade.

Regarding **claim 22**, Examiner takes official notice that it is common in the art to use vice jaws to hold work pieces of various sizes steady while cutting or machining them and therefore would have been obvious to one of ordinary skill in the art at the time of invention to do likewise by implementing a vice type grip such as that described in the claim, by adjusting the inclined portions of the brackets and moving them towards or away from one another, altering the position of the core.

Regarding **claim 12**, as mentioned, there exist vices and other support structures comprising a threaded member which, when rotated, causes two "support members" to move towards or away from one another. Such vices comprise "bores" which a threaded bolt fits through allowing such manipulation.

Regarding **claim 13**, it would have been obvious to one of ordinary skill in the art at the time of invention to manipulate the two support members simultaneously since they would be clamping or supporting a sample with an approximately constant diameter throughout and this would remove the need for performing the same operation of adjustment twice.

Regarding **claim 14**, rotation of two separate parts by means of a belt and pulley is a known process in which one turning element simultaneously turns another element at a 1:1 ratio. Therefore, it would have been obvious to one of ordinary skill in the art to use such a belt system to rotate the bolts as needed simultaneously.

Art Unit: 2856

Regarding **claim 24**, Cymbalisty discloses an apparatus for cutting a core sample of tar sand in which a "core support device" 4 allows for the core to be held in position during cutting. A cutting head in the saw carriage 8 which holds a circular saw exists for cutting the sample lengthwise, or "along radial planes into two or more parts" as claimed. Cymbalisty does not disclose a liquid bath or trough in which the core sample is located during cutting along with the core support device. Cymbalisty discloses a "cowling" 216 seen in figure 6 covering the cutting tools 215 and extending to the workpiece which is to be cut, thereby ensuring no dust escapes during the cutting process.

Rigley discloses a sawing apparatus for cutting concrete beams for example which uses a circular saw to move across a sample work which is disposed in a liquid bath or trough during cutting. It would have been obvious to one of ordinary skill in the art at the time of invention to combine the cutting apparatus of Cymbalisty with the trough of Rigley to reduce noise and dust while simultaneously cooling the blade to avoid cracking during the cutting of a core sample. In order to do so, the core holder and support device would be placed within the trough and the sample and lower edges of the cowling would be under the surface of a liquid such as oil or water in order to trap any dust or sediment generated. During operation, the blade would move along the trough to cut the core as claimed.

Regarding **claim 25**, the cowling of Cymbalisty as seen in figure 5 comprises a top wall and side walls to keep the dust generated during cutting from entering the atmosphere. The front and back of the cowling have openings which accommodate a

Art Unit: 2856

core on the core support device. Cymbalistry does not explicitly disclose a front and rear wall, however, it would have been obvious to one of ordinary skill in the art at the time of invention to have include such walls to prevent the dust from leaving through the front and back, as well as the top.

Regarding **claim 26**, the Cymbalistry reference does not explicitly disclose an elongated inclined wall leading from the rear of the top wall to the rear wall as is claimed. However, as no criticality is presented in the specification as to why such a design is beneficial, it is seen as a design choice of the inventor and does not hold patentable weight as one of ordinary skill in the art would be able of modifying the system in such a way.

Regarding **claim 27**, there is no criticality given in the specification as to the benefits of spacing the rear wall at a distance from the blade of three quarters the diameter of the blade and the limitation is seen as merely a design choice of the inventor for this reason and therefore does not hold patentable weight.

Allowable Subject Matter

Claims 19-21 are allowed.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

Art Unit: 2856

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARK SHABMAN whose telephone number is (571)270-3263. The examiner can normally be reached on M-F 8:00am - 4:30pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2856

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. S./

Examiner, Art Unit 2856

/Hezron Williams/

Supervisory Patent Examiner, Art Unit 2856